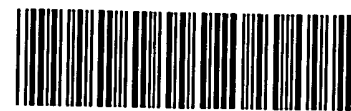


0570
0322

2

OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002

TIME: 14:38:18

Input Set : N:\Crf3\RULE60\10044359.raw

Output Set: N:\CRF3\05032002\J044359.raw

1 <110> APPLICANT: Herrman, Rafael
 2 Wong, James F.
 3 Lee, Jian-Ming
 4 <120> TITLE OF INVENTION: SCORPION TOXINS
 5 <130> FILE REFERENCE: BB1367 US NA
 6 <140> CURRENT APPLICATION NUMBER: 10/044,359
 7 <141> CURRENT FILING DATE: 2002-01-11
 9 <150> PRIOR APPLICATION NUMBER: 09/599,416
 10 <151> PRIOR FILING DATE: 2000-06-22
 13 <150> PRIOR APPLICATION NUMBER: 60/140,227
 14 <151> PRIOR FILING DATE: 1999-06-22
 15 <160> NUMBER OF SEQ ID NOS: 28
 16 <170> SOFTWARE: Microsoft Office 97
 18 <210> SEQ ID NO: 1
 19 <211> LENGTH: 177
 20 <212> TYPE: DNA
 21 <213> ORGANISM: Hottentotta judaica
 22 <400> SEQUENCE: 1
 23 atgagccgta ttttcacaat catcttaatt gtattcgct taaatataat tatttcttta 60
 24 tctaatttta aagtggaagc agtcaatgc tattccagtg attgtagagt gaaatgtgcc 120
 25 gctatgggat tcaactcagg aaaatgtata aacagtaa at gtaaatgcta taaataa 177
 27 <210> SEQ ID NO: 2
 28 <211> LENGTH: 58
 29 <212> TYPE: PRT
 30 <213> ORGANISM: Hottentotta judaica
 31 <400> SEQUENCE: 2
 32 Met Ser Arg Ile Phe Thr Ile Ile Leu Ile Val Phe Ala Leu Asn Ile
 33 1 5 10 15
 34 Ile Ile Ser Leu Ser Asn Phe Lys Val Glu Ala Ala Gln Cys Tyr Ser
 35 20 25 30
 36 Ser Asp Cys Arg Val Lys Cys Ala Ala Met Gly Phe Asn Ser Gly Lys
 37 35 40 45
 38 Cys Ile Asn Ser Lys Cys Lys Cys Tyr Lys
 39 50 55
 41 <210> SEQ ID NO: 3
 42 <211> LENGTH: 186
 43 <212> TYPE: DNA
 44 <213> ORGANISM: Hottentotta judaica
 45 <400> SEQUENCE: 3
 46 atgaaatttt ttacttcagt tctaattgat atgataattt tctcaatggt tatttcgagc 60
 47 cacgctcaat acgagttgga tgtaacgtgt atgggaggag cagataattg cgtaaaacca 120
 48 tgctatgata aatacggcac aactaaaact aaatgcatca acgatcgggt caactgttat 180
 49 ccgtaa 186

ENTERED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002

TIME: 14:38:18

Input Set : N:\Crif3\RULE60\10044359.raw

Output Set: N:\CRF3\05032002\J044359.raw

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51 <210> SEQ ID NO: 4
52 <211> LENGTH: 61
53 <212> TYPE: PRT
54 <213> ORGANISM: Hottentotta judaica
55 <400> SEQUENCE: 4
56   Met Lys Phe Phe Thr Ser Val Leu Met Met Met Ile Ile Phe Ser Met
57       1               5               10               15
58   Val Ile Ser Ser His Ala Gln Tyr Glu Leu Asp Val Thr Cys Met Gly
59               20               25               30
60   Gly Ala Asp Asn Cys Val Lys Pro Cys Tyr Asp Lys Tyr Gly Thr Thr
61               35               40               45
62   Lys Thr Lys Cys Ile Asn Asp Arg Cys Asn Cys Tyr Pro
63       50               55               60
65 <210> SEQ ID NO: 5
66 <211> LENGTH: 180
67 <212> TYPE: DNA
68 <213> ORGANISM: Hottentotta judaica
69 <400> SEQUENCE: 5
70   atgaagtttt cttcaattat tctattaact ctccttatct gttcaatgac catatgtatt 60
71   aattgccaaag tagaaacaaa tgtgaaatgt acaggtggct catgtgcttc aacatgtaaa 120
72   agagtaatag gagtagctgc aggaaaatgc attaatggaa gatgtgtctg ctatccgtag 180
74 <210> SEQ ID NO: 6
75 <211> LENGTH: 59
76 <212> TYPE: PRT
77 <213> ORGANISM: Hottentotta judaica
78 <400> SEQUENCE: 6
79   Met Lys Phe Ser Ser Ile Ile Leu Leu Thr Leu Leu Ile Cys Ser Met
80       1               5               10               15
81   Thr Ile Cys Ile Asn Cys Gln Val Glu Thr Asn Val Lys Cys Thr Gly
82               20               25               30
83   Gly Ser Cys Ala Ser Thr Cys Lys Arg Val Ile Gly Val Ala Ala Gly
84               35               40               45
85   Lys Cys Ile Asn Gly Arg Cys Val Cys Tyr Pro
86       50               55
88 <210> SEQ ID NO: 7
89 <211> LENGTH: 171
90 <212> TYPE: DNA
91 <213> ORGANISM: Hottentotta judaica
92 <400> SEQUENCE: 7
93   atgagtcggtt tgtttacact ggttttaatt gtattggcca tgaacgtgat gatggctatt 60
94   atatcggatc ctggagtgga agctgttgat tgtgaagaat gcccttttca ttgcgcaggc 120
95   aaaaacgccca tacctacctg cgatgatggc gagtgtaact gcaacgtatg a 171
97 <210> SEQ ID NO: 8
98 <211> LENGTH: 56
99 <212> TYPE: PRT
100 <213> ORGANISM: Hottentotta judaica
101 <400> SEQUENCE: 8
102   Met Ser Arg Leu Phe Thr Leu Val Leu Ile Val Leu Ala Met Asn Val
103       1               5               10               15

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002

TIME: 14:38:18

Input Set : N:\Crif3\RULE60\10044359.raw

Output Set: N:\CRF3\05032002\J044359.raw

```

104      Met Met Ala Ile Ile Ser Asp Pro Gly Val Glu Ala Val Asp Cys Glu
105                      20                      25                      30
106      Glu Cys Pro Phe His Cys Ala Gly Lys Asn Ala Ile Pro Thr Cys Asp
107                      35                      40                      45
108      Asp Gly Glu Cys Asn Cys Asn Val
109                      50                      55
111 <210> SEQ ID NO: 9
112 <211> LENGTH: 180
113 <212> TYPE: DNA
114 <213> ORGANISM: Hottentotta judaica
115 <400> SEQUENCE: 9
116      atgaaaatga gccgtcttta tgcaatcatc ttaattgttc ttgtcatgaa tgtaattatg 60
117      acaattatgc ctgattcgaa agtagaagct gttggttgtg aagattgccc tgagcactgt 120
118      tcccagcaaa atgcccgcagc aaaatgtgaa aatgacaaat gtgtatgcga acctaaatga 180
120 <210> SEQ ID NO: 10
121 <211> LENGTH: 59
122 <212> TYPE: PRT
123 <213> ORGANISM: Hottentotta judaica
124 <400> SEQUENCE: 10
125      Met Lys Met Ser Arg Leu Tyr Ala Ile Ile Leu Ile Val Leu Val Met
126      1                      5                      10                      15
127      Asn Val Ile Met Thr Ile Met Pro Asp Ser Lys Val Glu Ala Val Gly
128                      20                      25                      30
129      Cys Glu Asp Cys Pro Glu His Cys Ser Gln Gln Asn Ala Arg Ala Lys
130                      35                      40                      45
131      Cys Glu Asn Asp Lys Cys Val Cys Glu Pro Lys
132                      50                      55
134 <210> SEQ ID NO: 11
135 <211> LENGTH: 213
136 <212> TYPE: DNA
137 <213> ORGANISM: Hottentotta judaica
138 <400> SEQUENCE: 11
139      atgataaagg aattattatc tacagaaatg tacaattact acaaatttgt tttaattatg 60
140      gttgtgttct ttgcagctac aattattttc tctgatataa atgtagaagg tgcattttgt 120
141      aatcttagaa ggtgtcagtt aatttgtaga gaaagtggat tattaggaaa gtgcattgga 180
142      gatagatgcg aatgtgttcc acatggcaaa taa 213
144 <210> SEQ ID NO: 12
145 <211> LENGTH: 70
146 <212> TYPE: PRT
147 <213> ORGANISM: Hottentotta judaica
148 <400> SEQUENCE: 12
149      Met Ile Lys Glu Leu Leu Ser Thr Glu Met Tyr Asn Tyr Tyr Lys Phe
150      1                      5                      10                      15
151      Val Leu Ile Met Val Val Phe Phe Ala Ala Thr Ile Ile Phe Ser Asp
152                      20                      25                      30
153      Ile Asn Val Glu Gly Ala Phe Cys Asn Leu Arg Arg Cys Gln Leu Ile
154                      35                      40                      45
155      Cys Arg Glu Ser Gly Leu Leu Gly Lys Cys Ile Gly Asp Arg Cys Glu
156                      50                      55                      60

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002

TIME: 14:38:18

Input Set : N:\Crf3\RULE60\10044359.raw

Output Set: N:\CRF3\05032002\J044359.raw

```

157      Cys Val Pro His Gly Lys
158      65                               70
160 <210> SEQ ID NO: 13
161 <211> LENGTH: 186
162 <212> TYPE: DNA
163 <213> ORGANISM: Hottentotta judaica
164 <400> SEQUENCE: 13
165      atgaagtttc tctatggaat cattttgatt gctcttttct taactgtaat gattgcaact 60
166      cattctgaag ctcgttgtcc taattgcttt acaacaaatc cgaatgcaga agctgattgt 120
167      aagaaatggt gcggaaatag gtgggggaaaa tgtgctggtt atcagtgcgt ctgtccaatg 180
168      aagtaa                               186
170 <210> SEQ ID NO: 14
171 <211> LENGTH: 61
172 <212> TYPE: PRT
173 <213> ORGANISM: Hottentotta judaica
174 <400> SEQUENCE: 14
175      Met Lys Phe Leu Tyr Gly Ile Ile Leu Ile Ala Leu Phe Leu Thr Val
176      1              5              10              15
177      Met Ile Ala Thr His Ser Glu Ala Arg Cys Pro Asn Cys Phe Thr Thr
178      20              25              30
179      Asn Pro Asn Ala Glu Ala Asp Cys Lys Lys Cys Cys Gly Asn Arg Trp
180      35              40              45
181      Gly Lys Cys Ala Gly Tyr Gln Cys Val Cys Pro Met Lys
182      50              55              60
184 <210> SEQ ID NO: 15
185 <211> LENGTH: 176
186 <212> TYPE: DNA
187 <213> ORGANISM: Hottentotta judaica
188 <400> SEQUENCE: 15
189      atgaaaatttt tgtctgttct tttgatagct ctgattattt gctcattggg cgtttgtata 60
190      gaagctggac ttatagacgt aagatgtagt gcctctcggtg aatgttgggg agcttgcaga 120
191      aaagtaacag gatcaggaca aggaaagtgc cagaataacc aatgtcggtt ttatta 176
193 <210> SEQ ID NO: 16
194 <211> LENGTH: 58
195 <212> TYPE: PRT
196 <213> ORGANISM: Hottentotta judaica
197 <400> SEQUENCE: 16
198      Met Lys Ile Leu Ser Val Leu Leu Ile Ala Leu Ile Ile Cys Ser Leu
199      1              5              10              15
200      Gly Val Cys Ile Glu Ala Gly Leu Ile Asp Val Arg Cys Ser Ala Ser
201      20              25              30
202      Arg Glu Cys Trp Glu Ala Cys Arg Lys Val Thr Gly Ser Gly Gln Gly
203      35              40              45
204      Lys Cys Gln Asn Asn Gln Cys Arg Cys Tyr
205      50              55
207 <210> SEQ ID NO: 17
208 <211> LENGTH: 177
209 <212> TYPE: DNA
210 <213> ORGANISM: Hottentotta judaica

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002

TIME: 14:38:18

Input Set : N:\Crif3\RULE60\10044359.raw

Output Set: N:\CRF3\05032002\J044359.raw

```

211 <400> SEQUENCE: 17
212      atgaaaattt tatctgttct tttgatagct ctcataatct gttcaataag tatttatagt 60
213      gaagctgacg ttatagacgt aaaatgtatt tcatctcaag aatggtggat tgcttgtaaa 120
214      aaagtaactg gacggtttca aggaaaaatgc cagaataaac aatgtcgctg ttattaa 177
216 <210> SEQ ID NO: 18
217 <211> LENGTH: 58
218 <212> TYPE: PRT
219 <213> ORGANISM: Hottentotta judaica
220 <400> SEQUENCE: 18
221      Met Lys Ile Leu Ser Val Leu Leu Ile Ala Leu Ile Ile Cys Ser Ile
222      1              5              10              15
223      Ser Ile Tyr Ser Glu Ala Asp Leu Ile Asp Val Lys Cys Ile Ser Ser
224      20              25              30
225      Gln Glu Cys Trp Ile Ala Cys Lys Lys Val Thr Gly Arg Phe Gln Gly
226      35              40              45
227      Lys Cys Gln Asn Lys Gln Cys Arg Cys Tyr
228      50              55
230 <210> SEQ ID NO: 19
231 <211> LENGTH: 174
232 <212> TYPE: DNA
233 <213> ORGANISM: Hottentotta judaica
234 <220> FEATURE:
235 <221> NAME/KEY: unsure
236 <222> LOCATION: (9)
237 <221> NAME/KEY: unsure
238 <222> LOCATION: (88)
W--> 239 <400> 19
W--> 240      attttatcng tttttctgat tactttcgtg atctgttcga taatgatttc aaccgaagct 60
W--> 241      cagtttatag acgtgaaatg cacatcanct aaggaatggt ggcctatttg taaggaaaga 120
242      ttgggtgtgg ccagaggaaa gtgcataaat aagcaatgcc gttgttattc gtaa 174
244 <210> SEQ ID NO: 20
245 <211> LENGTH: 57
246 <212> TYPE: PRT
247 <213> ORGANISM: Hottentotta judaica
248 <220> FEATURE:
249 <221> NAME/KEY: UNSURE
250 <222> LOCATION: (30)
251 <400> SEQUENCE: 20
252      Ile Leu Ser Val Phe Leu Ile Thr Phe Val Ile Cys Ser Ile Met Ile
253      1              5              10              15
W--> 254      Ser Thr Glu Ala Gln Phe Ile Asp Val Lys Cys Thr Ser Xaa Lys Glu
255      20              25              30
256      Cys Trp Pro Ile Cys Lys Glu Arg Phe Gly Val Ala Arg Gly Lys Cys
257      35              40              45
258      Ile Asn Lys Gln Cys Arg Cys Tyr Ser
259      50              55
261 <210> SEQ ID NO: 21
262 <211> LENGTH: 62
263 <212> TYPE: PRT

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002
TIME: 14:38:19

Input Set : N:\Crf3\RULE60\10044359.raw
Output Set: N:\CRF3\05032002\J044359.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:19; N Pos. 9,88
Seq#:20; Xaa Pos. 30
Seq#:28; Xaa Pos. 1

VARIABLE LOCATION SUMMARY
PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002
TIME: 14:38:19

Input Set : N:\Crf3\RULE60\10044359.raw
Output Set: N:\CRF3\05032002\J044359.raw

Use of n's or Xaa's(NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.
Use of <220> to <223> is MANDATORY if n's or Xaa's are present.
in <220> to <223> section, please explain location of n or Xaa, and which
residue n or Xaa represents.

Seq#:19; N Pos. 9,88
Seq#:20; Xaa Pos. 30
Seq#:28; Xaa Pos. 1

VERIFICATION SUMMARY

PATENT APPLICATION: US/10/044,359

DATE: 05/03/2002

TIME: 14:38:19

Input Set : N:\Crf3\RULE60\10044359.raw

Output Set: N:\CRF3\05032002\J044359.raw

L:239 M:258 W: Mandatory Feature missing, <220> not found for SEQ ID#:19
L:240 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:19
L:240 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:0
L:241 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:19
L:241 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19 after pos.:60
L:254 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:20
L:254 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:16
L:348 M:340 W: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:28